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Procedia Social and Behavioral Sciences 1 (2009) 1648–1652

Procedia
Social and Behavioral Sciences

World Conferences on Education Sciences 2009

A study on the relationship between pre-service teachers' information literacy skills and their attitudes towards distance education

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Received October 08, 2008; revised December 25, 2008; accepted January 06, 2009

Abstract

This paper presents the relationship between pre-service teachers' information literacy skills and their attitudes towards distance education. Two questionnaires were administered to 235 pre-service teachers enrolled in the department of primary school teaching, the department of science teaching and the department of Turkish language teaching at Kırıkkale University in Turkey in order to examine their attitudes and their literacy skills. Results of this study show that there is no significant relationship between participants' information literacy levels and their attitudes towards distance learning.

Keywords: Information literacy; distance education; preservice teachers; attitude.

1. Introduction

Education is a lifelong activity. Various factors such as the global economy, competitive environment, professional mobility and individuals' development needs require that education is, more than ever, a lifelong process (EURYDICE, 2001). In addition, many studies have proven that technology is an important component of modern-day education. For example, Pierson (2001) stated that integrating technology tools into teaching and learning programs is an inseparable part of good teaching. Yıldırım (2000) also claimed that teachers should obtain appropriate technological competence during their pre-service education to meet their future students' needs. Lifelong learning is a fact to which all modern education systems give importance. Lifelong learning processes also include distance education, in which educational technologies play an important role.

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1877-0428
doi:10.1016/j.sbspro.2009.01.291

1.1. Distance education

Generally, teaching in schools has been delivered face to face. However, today individuals not only need face-to-face education, but also may need to develop themselves by way of distance education. In addition, individuals' information literacy levels have an important effect on the success of distance education. Students, managers, workers, housewives, retired people, teachers and teacher candidates are some of the groups that may need to benefit from distance education. One of the groups that benefits from distance education facilities and that has high information literacy is university students. According to McIsaac and Gunawardena (1996), distance education delivers education to students who are not physically present at the site of education delivery. They also claimed that interaction between students and teachers increases in distance education. Moreover, most distance education courses rely on technologies which are either already in place or are being considered for their cost-effectiveness. Distance learning programs have played an increasingly important role in the achievement of universities' goals in recent years, and the trend seems likely to continue (Dewald, Crane, Booth, & Levine, 2000).

1.2. Information literacy

The Association of College and Research Libraries (ACRL) characterized information literacy as a set of abilities which allow learners to recognize when information is needed and to use information efficiently. They also assumed that information literacy is increasingly important because of the rapid expansion of technology-based information resources (ACRL, 2000). On the other word, information is now widely available via multiple media. Therefore, ACRL (2000) defines the information literacy standards for individuals as follows:

1. Students are able to determine the level of information
2. They are able to access the needed information effectively
3. They can evaluate information and its sources critically
4. They are able to integrate selected information into their knowledge base
5. They are able to use information effectively to reach a particular aim
6. They are able to understand the economic, legal, and social issues surrounding given information
7. They are able to use of information ethically and legally

More recently, Akkoyunlu (2008) stated that individuals who have information literacy skills motivate themselves in lifelong learning. Therefore, students in higher education should acquire information literacy skills to progress in their learning. In addition, successful distance education courses should consider participants' information literacy skills to improve instruction (Akkoyunlu, 2008; Dewald et al., 2000).

2. Method

The purpose of this study is to determine the relationship between pre-service teachers' information literacy skills and their attitudes towards distance learning. The survey method was used in the study, which refers to the explanation of events or facts that took place at any time in any group of participants or study sample.

2.1. Participants

The present study was conducted using a sample of pre-service teachers attending the Faculty of Education in Kırıkkale University. The sample consisted of 235 pre-service teachers enrolled in Kırıkkale University, Faculty of Education, and Department of Elementary Education in Fall 2008. Of the participants, 84 were in the science teaching department, 82 were in the primary school teaching department and 69 were in the Turkish language teaching department.

2.2. Instruments

In the study, data were collected through two instruments. These were 1. Information Literacy Scale prepared by Aldemir (2004), and 2. Distance Education Attitude Scale developed by Ağır, Gür and Okçu (2008).

2.2.1. Information literacy scale

This is a Likert-type scale composed of 35 items. It is reported that the steps such as identifying the need for information, searching, obtaining, using and transmitting information, and assessment of the process were taken as bases for developing the scale. As the scale was developed to identify the information literacy level of pre-service teachers, it was used in its original version. The scale was administered to 235 pre-service teachers, and exploratory factor analysis was conducted to find the sub-factors of the scale. During the factor analysis, the varimax rotating technique was used. As a result of this rotating operation, a six-factor structure was found. In analyzing the structure of the factors, factor one was named "identifying the need for information", factor two was "searching for information on the Web", factor three was "searching for information at the library", factor four was "assessment of the process", factor five was "interpretation of the information", and factor six was "doing homework". Factor loadings of the items in the scale were seen to be between .390 and .824. Total variance explained by these six factors is reported as 56%. Furthermore, one item was extracted from the scale since it supports more than one factor. The Cronbach-alpha internal consistency coefficient was found to be 0.92.

2.2.2. Distance education attitude scale

The Distance Education Attitude Scale is a Likert-type scale composed of 21 items. Ağır, Gür and Okçu (2008) reported that the scale consisted of six factors and the Cronbach-alpha internal consistency coefficient of 0.83. This scale was administered to 235 pre-service teachers and an exploratory factor analysis was conducted to identify sub-factors of the scale. A one-factor structure composed of 16 items was found as a result. Rotation was not administered during the factor analysis. Factor loadings of the items in the scale were found to be between .390 and .824. The Cronbach-alpha internal consistency coefficient of the scale was found to be 0.81.

2.3. Data Analysis

The data were analyzed using SPSS. The mean ($\overline{X}$) and standard deviation (S) were calculated in analyzing the data. Moreover, Pearson's Moments Multiplication Correlation Coefficient was calculated to find out the relationship between the participants' information literacy levels and their attitudes towards distance education. Whether there was a significant relationship between the two was tested at the .05 level of significance (p).

3. Findings

Findings regarding the relationship between the participants' information literacy levels and their attitudes towards distance education are included in this section. Participants' mean scores of their information literacy levels are illustrated in Table 1.

Table 1. Information literacy level of the pre-service teachers

Dimensions of information literacy	N	$\overline{X}$	S
Identifying the need for information	235	3.76	.60
Searching for information on the Web	235	3.79	.85
Searching for information at the library	235	4.04	.70
Assessing information	234	3.96	.65
Interpreting information	234	4.08	.63
Doing assignments	235	4.08	.62
TOTAL	235	3.95	.67

As seen in Table 1, pre-service teachers' information literacy levels were quite high ($\overline{X}$ =3.95). The information literacy levels of the participants was highest in relation to the dimensions of "doing assignments" ($\overline{X}$ =4.08) and "interpreting information" ($\overline{X}$ =4.08). On the other hand, their literacy levels were lowest in "identifying the need for information" ($\overline{X}$ =3.76) and "searching for information on the Web" ($\overline{X}$ =3.79).

Table 2 shows the attitude of the pre-service teachers towards distance education.

Table 2. Preservice teachers' attitude towards distance education

	N	$\overline{X}$	S
Attitude towards DE	234	2.59	.51

As seen in Table 2, pre-service teachers' attitudes towards distance education was in the medium range ($\overline{X}$ =2.59). Thus, it can be said that the attitude of the average pre-service teacher is "neutral" regarding distance education.

Results of the Pearson Moments Multiplication Correlation Coefficient, indicating the relationship between pre-service teachers' information literacy levels and their attitudes towards distance education, are given in Table 3.

Table 3. The relationship between participants' information literacy level and distance education

	Attitude towards DE	Identifying the need for information	Assessing information	Doing homework	Searching for information on the Web	Searching for information at the library	Interpreting information
Attitude towards DE (r)	1.000	.055	-.095	-.010	-.001	-.125	-.096
p	,234	,401	.149	.882	.985	.055	.142
N		234	234	234	234	234	234

According to the findings in Table 3, there is no significant relationship between pre-service teachers' information literacy levels and their attitudes towards distance education. Moreover, the relationship between the scores regarding assessing and interpreting information and attitude towards distance education was not significant. In addition, it can be asserted from the table that there is no significant relationship between participants' searching for information on the internet or library and their attitudes towards distance education.

4. Conclusion

This study examined pre-service teachers' information literacy levels and their attitudes towards distance education. According to the data obtained, pre-service teachers' information literacy levels were high across not only sub-dimensions of the scale but also across the overall scale. The participants' information literacy was lowest

in relation to the dimensions "identifying the need for information" ($\overline{X}$ =3.76) and "searching for information on the Web" ($\overline{X}$ =3.79). The research carried out by Aldemir (2004) demonstrated that prospective teachers regard themselves less proficient in sub-dimensions like "identifying the need for information" and "accessing information by using technological instruments". Also Erdem, Yılmaz and Akkoyunlu (2008) found that pre-service teachers have a strong self-efficacy belief regarding their information literacy.

The findings of the study also revealed that the average pre-service teacher's attitude towards distance education was "neutral". This finding indicates that the participants have generally undecided attitude regarding distance education. The results of the study conducted by Ağır et al. (2008) showed that their participants had a "positive" attitude towards distance education. In the present study, pre-service teachers' neutral attitudes towards distance education can be explained by the fact that they believe in the efficiency of face-to-face education and they have not taken a course regarding distance education before.

The findings of the study indicate that there is no significant relationship between pre-service teachers' information literacy levels and their attitudes towards distance education. In other words, this finding suggests that neither low, medium nor high levels of pre-service teachers' information literacy significantly affect their attitudes towards distance education. Distance education entails that individuals involved in the process be responsible for their own learning, and that they motivate and direct themselves as needed. Akkoyunlu (2008) established a relationship between information literacy and lifelong learning, and stated that those having skills of information literacy and lifelong learning motivate, direct and empower themselves. The reason for the nonexistence of a significant relationship between information literacy and attitude towards distance education in this study might be that the literacy dimensions other than "identifying the need for information" and "searching for information on the Web" are perceived as part of face-to-face education processes. On the other hand, some researchers (Dewald et al., 2000) have highlighted that information literacy skills should be taken into consideration when distance education courses are designed and implemented.

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